REMARKS CONCERNING THE AMENDMENTS

The above amendments were made in an effort to more clearly define the steps of some elements of the presently claimed invention. Antecedent basis may be found generally in the specification and, for example, as follows:

Page 6 – "...toner particle coalescence is induced by heating the toned image to a temperature high enough above the effective glass transition temperature of the liquid toner particles so as to induce coalescence, but below the temperature required to fuse the toned image to the transparency receptor, and subsequently heating the coalesced toned image to a higher temperature sufficient to fuse the toned image to the transparency receptor."

SUMMARY OF THE OFFICE ACTION

1) Claims 1-16 have been rejected under 35 USC 103(a) as unpatentable over Landa (U.S. Patent No. 4,420,244) in view of Larson et al. (U.S. Patent Nos. 5,559,592 and 5,908,729). It is asserted that Landa teaches:

a) a method of forming an image with a toner;
b) removing 50% of the liquid and then fixing the image;
c) the removal of liquid reducing the free volume between the toner particles;
d) Larson teaches creating a network of interconnected toner particles from a liquid toner, transferring the network to a receptor and then fixing the transferred toner;
e) It is asserted that "forming of interconnected toner particles would reduce the free volume;"
f) It is asserted to be obvious to use the "dual heating of the liquid developer in the reduction of free volume during the coalescing of the toner."

2) Claims 17-24 have been rejected under 35 USC 103(a) as unpatentable over Landa (U.S. Patent No. 4,420,244) in view of Larson et al. (U.S. Patent Nos. 5,559,592 and 5,908,729).

ARGUMENTS

Summary of the Office Action

Claims 1-16 have been rejected under 35 USC 103(a) as unpatentable over Landa (U.S. Patent No. 4,420,244) in view of Larson et al. (U.S. Patent Nos. 5,559,592 and 5,908,729). It is asserted that Landa teaches:

g) a method of forming an image with a toner;
h) removing 50% of the liquid and then fixing the image;
i) the removal of liquid reducing the free volume between the toner particles;
j) Larson teaches creating a network of interconnected toner particles from a liquid toner, transferring the network to a receptor and then fixing the transferred toner;
k) It is asserted that "forming of interconnected toner particles would reduce the free volume;
l) It is asserted to be obvious to use the "dual heating of the liquid developer in the reduction of free volume during the coalescing of the toner.

Analysis

The rejection of record asserts teachings from the Landa reference that are not there. Landa not only fails to show heating **prior to fixing of the image** (the only heating taught is in disclosure of background technology not shown in the practice of the inventive technology of Landa). Additionally, that incidental teaching in the background technology does not show the critical limitation of claim 1 that:

> "heating the color developer image on the support at a temperature and for a time that the thermoplastic polymer coalesces and at least some of the organic liquid carrier evaporates at a rate that free volume between the particles is reduced and light scattering is thereby reduced."

The Examiner assumes that event to be taught or inherent, but it is absent from the disclosure of Landa and is not inherent in the teachings of the background art. The rejection is clearly in error in that regard.

A significant and believed to be fatal failure of this rejection and the subsequently discussed rejection of claims 17-24 resides in the fact that a problem addressed by the presently claimed invention has not been considered in the analysis of the patentability of the claims. The main objective of the practice of the disclosed technology is to reduce light-scattering (and therefore improve color fidelity) in electrophotographic images on **transparent supports**. That concept is never disclosed, and there is no disclosure

indicating any particular and advantageous use of either the Landa or Larson technologies on transparent substrates.

Every claim in the application was originally limited to the transparent substrates because the inventors believed that the unique transfer process provided recognizable benefits only in the use of transparent substrates. The reason for this is clearly disclosed in the original specification, but the summary is as follows. Images on transparent substrates are viewed by transmitted light. Transmitted light is subject to light-scattering and color shifts because of particle and particle-size-dependent interactions with light waves. The present process specifically acts to alter convention particle size and void space distribution in fused electrophotographic liquid toner images to reduce the light-scattering effects of toned images on transparent substrates.

No single element of this invention has been disclosed. An important element of this technology is the light-scattering reduction effected by the controlled removal of carrier liquid at specific times during the process. That has not been described by the art, even though the limitation is present in every claim in the application.

Note the specific language in claim 1 (for example) describing this effect, with certain terms **highlighted** to emphasize their absence from the combined teachings of the references:

> "...at least some of the **organic liquid carrier evaporates at a rate that free volume between the particles is reduced and light scattering is thereby reduced**."

Neither Landa no Larson addresses this problem. Larson does not correct this problem. Larson specifically shows:

> "A method and apparatus for transferring a developed image made up of toner particles and a liquid carrier to copy sheet, wherein the developed image is heated to a temperature such that the toner particles are sintered to form a coherent bonded network of toner particles without melting the individual toner particles to form a substantially solid mass, and where the coalesced toner particles still retain mobility in an electrostatic field."

There is no disclosure that the free volume of the toner material is substantially reduced as recited, that the color image is transferred or formed on a transparent substrate, **and**

that the reduction in free space reduces light-scattering on a final image formed on the **transparent substrate**. There is no specific disclosure of reducing free volume and reducing light scattering on a transparent substrate. Both references are silent as to the use of the process on a transparent substrate, so the benefit would not have been observed in the technologies practiced, as there is no benefit except on a transparent substrate..

Claims 17-24 have been rejected under 35 USC 103(a) as unpatentable over Landa (U.S. Patent No. 4,420,244) in view of Larson et al. (U.S. Patent Nos. 5,559,592 and 5,908,729).

In the same manner as the teachings of the reference have been analyzed above in the rejection of claims 1-16, it is further asserted in the rejection that the heating temperature (in the claims) is shown in Larson (Figure 2) and that it would have been obvious to one skilled in the art to heat the liquid developer to both reduce free volume and coalesce the thermoplastic resin in development.

There is no disclosure that the free volume of the toner material is substantially reduced as recited, that the color image is transferred or formed on a transparent substrate, **and** that the reduction in free space reduces light-scattering on a final image formed on the **transparent substrate**. There is no specific disclosure of reducing free volume and reducing light scattering on a transparent substrate. Both references are silent as to the use of the process on a transparent substrate, so the benefit would not have been observed in the technologies practiced, as there is no benefit except on a transparent substrate.

It has to be noted that the rejection of record fails to consider any of the numerous quantitative and qualitative limitations recited in the claims, especially like those of claim 24 wherein it is recited that:

> "...the film formed from the coalesced polymeric particles comprises **less than 12% free volume and displays at least 20% less light scatter of visible light transmitted by the color pigment than a transparency film formed from the same color liquid developer deposited in an identical process, but dried at a temperature no more than $80^{O}C$ above the effective Tg of the polymeric particles**.

The totality of that limitation is not shown in any combination of Landa in view of Larson et al. nor is it asserted to be shown in the rejection. The patentability of the invention as a whole has not been evidence in the rejection. The rejection must be withdrawn. Respectfully submitted,

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Date: 24 October 2005

By: _____
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CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described herein, are being deposited in the United States Postal Service, as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop: AMENDMENT, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450 on 24 OCTOBER 2005.

Mark A. Litman
Name

_____
Signature